AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions and listings of claims in the application.

1-40. (Cancelled)

41. (Previously presented) A method for identifying and quantifying tumour-associated peptides, the method comprising the following steps:

a) providing a sample from tumorous tissue and a sample from a corresponding healthy tissue, wherein both samples have identical amounts per weight or identical cellular counts;

b) isolating peptides from the tumorous tissue sample, wherein isolating the peptides is performed with an antibody specific for HLA class I molecules;

c) isolating peptides from the corresponding healthy tissue sample, wherein isolating the peptides is performed with an antibody specific for HLA class I molecules;

d) chemically modifying the peptides obtained in step (b) with a chemical group that contains a first stable isotope of an element from the periodic system of the elements;

e) chemically modifying the peptides obtained in step (c) with a chemical group that contains a second stable isotope of the element from the periodic system of the elements used in step d), wherein the first and second stable isotopes are different isotopes of the same element from the periodic system of elements;

f) mixing of the chemically modified peptides obtained from steps (d) and (e);

g) separating the peptides obtained from step f) by a chromatographic method;

h) determining the amino acid sequence of the peptides;

i) determining the relative ratio of the amount of peptides having identical amino acid sequences isolated from both the tumor and corresponding healthy tissue samples, using the difference of the first and second stable isotopes of the same element to determine the relative ratio;

j) using the relative ratio determination in step (i) to identify tumor associated peptides; and

k) testing reactivity of T lymphocytes against the tumor associated peptides to identify immunogenic tumor associated peptides, and wherein the peptide has the ability to bind to a molecule of MHC class-I.

42. (Previously presented) The method according to claim 41 wherein deuterium (^{2}D) and regular hydrogen (^{1}H) are used as the first and second stable isotopes.

43. (Previously presented) The method of claim 42 wherein the chemical modifications comprise guanidination of the ε-amino group of a lysine residue in the peptides with *O*-methyl-isourea-hemisulfate and nicotinylation of the α-amino group of the peptides with nicotinyl-N-hydroxy-succinimide-ester (NicNHS).

44. (Previously presented) The method of claim 43, wherein the nicotinylation is either $^2D_3$- or $^1H_3$ nicotinylation.

45. (Previously presented) The method of claim 43, further comprising treating of the modified peptides with hydroxylamine.

46. (Previously presented) The method according claim 41, wherein in the chromatographic method comprises HPLC.

47. (Previously presented) The method according to claim 41, wherein steps (h) and (i) are performed by mass spectrometric analysis.

48. (Cancelled).

49. (Previously presented) The method according to-claim 41, wherein the testing of the reactivity takes place by the activation of peripheral T-lymphocytes by reconstituted complexes from antigen-presenting molecules and the peptides.

50–60. (Cancelled).

61. (Previously presented) The method of claim 43, wherein the nicotinylation is either $^2D_4$- or $^1H_4$-nicotinylation.